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| TAIYO CORPORATION 401 HOLLAND LANE #407 ALEXANDRIA, VA 22314 | | | EXAMINER CHEA, THORL | |
| | | | ART UNIT | PAPER NUMBER |
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DATE MAILED: 08/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/756,407

Applicant(s)

FUKUI, KOUTA

Examiner

Thorl Chea

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 June 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 6-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-4, 6-15, 17-19 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The language “wherein an image gradation obtained by heat development is 2 to 4” is unclear as to which image is referred to.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 4-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Goto (Pub. No.:US 2002/0039707), Siga et al (US Patent No. 4,332,889) and Toya et al (US Patent No. 5,998,126).

Goto discloses a photothermographic material substantially as claimed. The material contains an image forming layer having a photosensitive silver halide, a non-photosensitive organic silver salt, a reducing agent and a compound defined as silver saving-agent defined in the present claimed invention. The silver halide includes silver iodobromide and silver iodide. See the photothermographic material on pages 15-19, Example 1; page 5, [0054], [0061]; pages 10-11, [0080] to [0086]. The amount of silver halide and organic silver salts from 0.3 to 2.2 g/m² on

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page 5, [0059]; and the bisphenol reducing on page 14, [0103]. Siga et al (US Patent no. 4,332,889) disclose a use of silver halide having iodide content at least 30 mole % include silver iodide, and silver iodobromide having molar ratio of silver iodide to silver bromide preferably from 30/70 to 98/2, more preferably 50/50 to 95/5 to provide heat developable material with excellence in both stability and sensitivity. See column 6, lines 50-68 and column 2, lines 5-10. Toya et al (US Patent No. 5,998,126) discloses a photographic material containing silver halide having iodide content from 0.1 to 40 mole % and the material is capable to be exposed using laser beam from 300 to 700 nm. See column 16, lines 50-64 and column 2, lines 1-11.

Goto may not exemplified the use of the silver iodide, but suggest the use thereof as an alternative to other silver halide such as silver chloride, silver chlorobromide, silver iodochlorobromide, silver bromide or silver bromiodide. However, the benefit of the use of silver halide having iodide in the heat-developable material has been known in Siga et al to provide a heat-developable with an excellence in both stability and sensitivity. Therefore, it would have been obvious to the worker of ordinary skill in the art at the time the invention selected the silver iodide taught in Goto or the silver halide having high iodide content taught in Siaga et al or Toya et al with a reasonable expectation of achieving a material having excellent in both stability and sensitivity, and thereby provide a material as claimed.

5. Claims 1-4, 6-15, 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Katoh (Pu.No. 2001/0038977), Siga et al (US Patent No. 4,332,889) and Toya et al (US Patent No. 5,998,126).

Kato discloses a multilayer photothermographic material a layer containing silver-supplying an organic silver salt, a reducing agent, an organic binder and substantially no photosensitive

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silver halide and a separate layer containing a photosensitive layer, and the heat-developable material further containing an electron transfer such as hydrazine derivative and alkene derivative. The silver halide includes any of silver chloride, silver iodochlorobromide, silver bromide, silver iodobromide, and silver chlorobromide. See pages 35-36, claims 1-15 and page 18, [0086].

Siga et al (US Patent no. 4,332,889) discloses a use of silver halide having iodide content at least 30 mole % include silver iodide, and silver iodobromide having molar ratio of silver iodide to silver bromide preferably from 30/70 to 98/2, more preferably 50/50 to 95/5 to provide heat developable material with excellence in both stability and sensitivity. See column 6, lines 50-68 and column 2, lines 5-10. Toya et al (US Patent No. 5,998,126) discloses a photographic material containing silver halide having iodide content from 0.1 to 40 mole % and the material is capable to be exposed using laser beam from 300 to 700 nm. See column 16, lines 50-64 and column 2, lines 1-11. Katoh may not exemplified the use of the silver iodide, but suggest the use thereof as an alternative to other silver halide such as silver chloride, silver chlorobromide, silver iodochlorobromide, silver bromide or silver bromiodide. However, the benefit of the use of silver halide having iodide in the heat-developable material has been known in Siga et al to provide a heat-developable with an excellence in both stability and sensitivity. Therefore, it would have been obvious to the worker of ordinary skill in the art at the time the invention use silver halide having high iodide content taught in Siga et al or Toya et al with a reasonable expectation of achieving a material having excellent in both stability and sensitivity, and thereby provide a material as claimed. Moreover, it would have been obvious to the worker of ordinary skill in the art at the time the invention was made to use the electron-transfer agent taught in

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Katoh such as hydrazine derivative or the alkene derivative in either in either layers taught in Katoh with a reasonable expectation of improving the image contrast because both layers of contains either silver halide or silver salt of an organic acid.

Claims 1-4, 6-15, 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of EP 1168066 (EP'066) and Siga et al. EP'066 discloses a photothermographic material as a whole wherein the material containing photosensitive silver halide, a non-photosensitive organic silver salt, a reducing agent, a binder and a silver-saving agent, and wherein the material exhibit an average contrast of 2.0 to 6.0. The silver halide include any one of silver chloride, silver chlorobromide, silver iodochlorobromide, silver bromide, silver iodobromide and silver iodide. See pages 84-87, claims 1-15; Table 3 on page 83 which show gamma less than 4.0 and silver halide on page 5, [0026]. Siga disclose in column 6, lines 43-68 the relative amount of the silver iodide with respect to silver bromide to satisfy the sensitivity condition and storage condition. It is disclosed that "from the view point of sensitivity of image forming material, the silver halide is desired to contains, beside silver iodide, at least 2 mole %, based on silver halide component, silver bromide and/or silver chloride, although the silver halide may include only silver iodide, i.e. 100 mole % of silver iodide. Furthermore, from view point of stability of the raw image forming material, it is desired that silver halide component contains, besides silver iodide, silver bromide than silver chloride. Therefore, the most preferred silver halide component consists of silver iodide and silver bromide. In this case, silver iodide and silver bromide may be provided in either a mixture thereof or mixed crystals thereof. The molar ratio of silver iodide to silver bromide may be preferably 30/70 to 98/2, more preferably 50/50 to 95/5." It would have been obvious to use silver iodide taught in EP'066 or the silver

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halide taught in Siga et al in the material of EP'066 with an expectation of achieving a material with improved sensitivity and raw material stability, and thereby provide a material as claimed.

Response to Arguments

6. Applicant's arguments filed June 14, 2005 have been fully considered but they are not persuasive for the reason set forth in the above rejection. It is the Examiner's position that the claimed invention would have been found prima facie obvious over the combination of the applied prior of record such as presented above, and the applicants' argument and the Declaration submitted on June 14, 2005 fails to obviate the rejection.

The applicants argue that the material of Goto and Katoh I exhibit high contrast, and used hydrazine compounds, olefin compound and onium compounds as contrast-increasing agent. Example 1 in Goto show gamma of 14.6 to 15.6. Both Goto and Katoh do not disclose the silver halide having silver iodide content of 40 to 100 mole %. The image gradation obtained by the claimed material is 2 to 4. The present invention is related to the problem solving associated with the photothermographic material for medical diagnostic which is not addressed by the prior art of record.

The argument is not persuasive. The scope of the silver-saving agent claimed in the present claimed invention encompasses the scope of the hydrazine hydrazine compounds, olefin compound and onium compounds. See the compound 5-1-5 disclosed on page 36 of the specification and used in the Exemplified samples is the compound disclosed in Goto page 7, H-1-5. The term "silver saving agent" and the term "image contrast enhancing agent" have the same meaning in the art. The silver halide having silver iodide content of 40 to 100 mole % may not exemplify in Goto and Kato. However, it has been known in the secondary references

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such as Siga et al which disclose in column 6, lines 43-68, the relative amount of the silver iodide with respect to silver bromide to satisfy the sensitivity condition and storage condition. It is disclosed that "from the view point of sensitivity of image forming material, the silver halide is desired to contains, beside silver iodide, at least 2 mole %, based on silver halide component, silver bromide and/or silver chloride, although the silver halide may include only silver iodide, i.e. 100 mole % of silver iodide. Furthermore, from view point of stability of the raw image forming material, it is desired that silver halide component contains, besides silver iodide, silver bromide than silver chloride. Therefore, the most preferred silver halide component consists of silver iodide and silver bromide. In this case, silver iodide and silver bromide may be provided in either a mixture thereof or mixed crystals thereof. The molar ratio of silver iodide to silver bromide may be preferably 30/70 to 98/2, more preferably 50/50 to 95/5." Therefore, the worker of ordinary skill in the art would use the silver halide taught in Siga et al in the material of Goto or Katoh to achieve a material with improve sensitivity and storage stability. The limitation "an image gradation by heat development is 2 to 4" fails to limit the composition of the claimed material since this characteristic is related to the characteristic material and the process of forming an image. The same photographic material would produce different characteristic due to length , amount of light in imagewise exposure and heat development. Therefore, it is improper to use this characteristic to differentiate the composition of the material before processing. The applicants are referred to pages 72-73 of the Theory Of The Photographic Process, especially Fig. 4.1 which shows the curve of the density vs. log exposure, and gamma is defined as $\tan\theta$. The angle θ depend on the curve density and the log exposure. Therefore, $\tan\theta$ depends on the log exposure. It is reminded that the rejections are based on the combination of the applied prior

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art of record, and it is improper to argue each reference individually. One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). The argument with respect to the photothermographic material for medical diagnosis is not persuasive since it is related to the intentional used which fails to differentiate the claimed material from that of the applied prior art of record. See also the material of EP'066 which discloses a material having gamma less than 4.0 such as shown in the above rejection.

The Declaration under 37 CFR 1.132 on June 14, 2004 fails to overcome the above rejection since the results is not related to the material of the applied prior art of record. The differences between the teaching of the applied prior art of record and that of the claimed invention is the amount of iodide content in the material. Both prior art of record such as Goto and Katoh require the silver-saving agent therein. See the samples in Table 100 wherein the comparative samples contain no silver saving agent therein, but silver iodide composition. Therefore, the criticality of the silver iodide in the material of the applied prior art cannot be determined.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

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the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thorl Chea whose telephone number is (571) 272-1328. The examiner can normally be reached on 9 AM-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia H. Kelly can be reached on (571)272-1526. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tch 
August 12, 2005


Thorl Chea
Primary Examiner
Art Unit 1752